

REMARKS

Applicants have studied the Office Action dated January 30, 2003 and have made amendments to the claims. Applicants respectfully request entry of this amendment under the provisions of 37 C.F.R. § 1.116(a) in that the amendment and remarks below place the application and claims in condition for allowance, or, at least, present the application in better form for appeal. It is submitted that the application, as amended, is in condition for allowance. Claims 1-24 are pending. Claim 15 has been amended. Reconsideration and allowance of the claims in view of the above amendments and the following remarks are respectfully requested.

Claims 1-24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Garroppo et al. ("A teletraffic analysis of dial-up connections over PSTN"). This rejection is respectfully traversed.

The present invention is directed to the simulation of a low-bandwidth connection over a higher-bandwidth connection by placing a speed control layer between two devices in order to adjust the speed at which data is transferred. One preferred embodiment provides a method of simulating a low-bandwidth connection over a higher-bandwidth connection. According to the method, data from a first device is received at a speed control layer at a first speed. There is a high-bandwidth connection at a third speed between the speed control layer and a client device, and the maximum data transfer speed of the high-bandwidth connection between the speed control layer and the client device is limited so as to transfer the data at a second speed over the high-bandwidth connection from the speed control layer to the client device. The second speed at which the data is transferred from the speed control layer to the client device is less than the first speed and less than the third speed.

In other words, the speed at which the data is transferred from the speed control layer to the client device is: less than the speed at which the data is received from the first device, and less than the speed of the high-bandwidth connection between the speed control layer and the client device. Thus, even though data is received at the speed control layer at the first speed and

there is a high-bandwidth connection at the third speed between the speed control layer and the client device, data transfer between the speed control layer and the client device is limited to the slower second speed. This simulates a low-bandwidth connection at the slower (second) speed between the first and client devices, even though a faster connection (at the lower of the first and third speeds) actually exists between the first and client devices.

The Garroppo reference discloses the collection and analysis of traffic data for an Internet dial-up access server. However, Garroppo does not disclose a method of simulating a low-bandwidth connection in which data is received at a speed control layer at a first speed, and the maximum data transfer speed of a high-bandwidth connection between the speed control layer and a client device, which is at a third speed, is limited so as to transfer the data from the speed control layer to the client device at a second predetermined speed, which is less than the first speed and less than the third speed of the high-bandwidth connection, as is recited in independent claim 1. Independent claim 9 contains similar recitations.

Likewise, Garroppo does not disclose a computer system that includes a first device transferring data at a first speed, and a speed control layer coupled between the first device and a client device for limiting the maximum data transfer speed of a high-bandwidth connection between the speed control layer and the client device so as to transfer data from the first device to the client device over the high-bandwidth connection at a second predetermined speed that is less than the first speed and less than the normal speed of the high-bandwidth connection, as is recited in amended claim 15. Similarly, Garroppo does not disclose a proxy server that includes speed control means for limiting the maximum data transfer speed of a high-bandwidth connection between a server and a client computer so as to transfer data from the server to the client computer over the high-bandwidth connection at a first predetermined speed that is less than the normal speed of the high-bandwidth connection, as is recited in independent claim 20.

Garroppo discloses a computer system that was used to analyze the traffic of an Internet dial-up access server. As shown in Figure 1, the computer system disclosed in Garroppo includes multiple client computers that are connected to an access server over a PSTN (i.e., telephone) network. The access server includes an analog modem pool and a dial-up router, and is directly connected to the Internet at a speed of 64 kbps or 128 kbps. The client computers

connect to the access server over the PSTN network via modem at a speed of 28.8 kbps or 33.6 kbps. During operation, data from a remote server is received at the access server at a first speed (e.g., 128 kbps), and is then transferred from the access server to one of the client computers at a second speed (e.g., 33.6 kbps).

Thus, in the computer system disclosed in Garroppo, the access server is connected to a client computer by an analog modem connection at a given speed (e.g., 33.6 kbps), and data is always transferred from the access server to this client computer over the analog modem connection at this speed (e.g., 33.6 kbps). In other words, the maximum data transfer speed over the connection between the access server and the one client computer is never limited by the access server to a speed that is less than the actual speed of this connection (between the access server and the client computer).

In contrast, in preferred embodiments of the present invention, the maximum data transfer speed over the connection between the speed control layer and the client device is limited so as to transfer data to the client device at a speed that is less than the actual speed of this connection. More specifically, in the embodiments recited in claims 1 and 9, there is a connection at a third speed between the speed control layer and the client device. Data from the first device is received at the speed control layer at a first speed, and is then transferred at a second speed from the speed control layer to the client device over the connection. This second speed (at which the data is transferred from the speed control layer to the client device) is less than the first speed (at which the data is received from the first device) and less than the third speed (i.e., the actual speed of the connection between the speed control layer and the client device).

Further, in the embodiments recited in claims 15 and 20, there is a high-bandwidth connection at a normal speed between a first device and a client device. A speed control layer or means transfers data at a first speed to the client device over the high-bandwidth connection. This first speed (at which the data is transferred to the client device) is less than the normal speed (or actual speed) of the high-bandwidth connection between the speed control layer and the client device. Thus, in preferred embodiments of the present invention, data transfer to the client device is limited to a slower speed, even though there is a connection at a faster speed to the client device. This simulates a low-bandwidth connection at the slower speed between the

sending device and the client device, even though a faster connection actually exists between the sending and client devices.

Garroppo does not teach or suggest limiting the maximum data transfer speed over the connection to a client device so as to transfer data to the client device at a speed that is less than the actual speed of this connection. In Garroppo, the maximum data transfer speed over the connection to a client computer is never limited to a speed that is less than the actual speed of this connection. Applicants believe that the differences between Garroppo and the present invention are clear in claims 1, 9, 15, and 20, which set forth various embodiments of the present invention. Therefore, claims 1, 9, 15, and 20 distinguish over the Garroppo reference, and the rejection of these claims under 35 U.S.C. § 103(a) should be withdrawn.


As discussed above, claims 1, 9, 15, and 20 distinguish over the Garroppo reference, and thus, claims 2-8, claims 10-14, claims 16-19, and claims 21-24 (which depend from claims 1, 9, 15, and 20, respectively) also distinguish over the Garroppo reference. Therefore, it is respectfully submitted that the rejection of claims 1-24 under 35 U.S.C. § 103(a) should be withdrawn.

In view of the foregoing, it is respectfully submitted that the application and the claims are in condition for allowance. Reexamination and reconsideration of the application, as amended, are requested.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is invited to call the undersigned attorney at (561) 989-9811 should the Examiner believe a telephone interview would advance the prosecution of the application.

Respectfully submitted,

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APPENDIX

IN THE CLAIMS:

15. (Twice Amended) A computer system comprising:
 - a first device [for receiving] transferring data at a first speed;
 - a second device, the second device being a client device; and
 - a speed control layer coupled between the first and second devices, the speed control layer limiting the maximum data transfer speed of a high-bandwidth connection between the speed control layer and the second device so as to transfer data from the first device to the second device over a high-bandwidth connection at a second predetermined speed that is less than the first speed and less than the normal speed of the high-bandwidth connection.